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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/679,714	10/06/2003	Aziz Chafic Awad	Healthtreat 4.1-1	2884
21036 7590 04/04/2007 MCLEOD & MOYNE, P.C. 2190 COMMONS PARKWAY OKEMOS, MI 48864			EXAMINER THAKUR, VIREN A	
			ART UNIT	PAPER NUMBER
			1761	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		04/04/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/679,714

Applicant(s)

AWAD, AZIZ CHAFIC

Examiner

Viren Thakur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 and 16-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 February 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892).
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 8, 2007 has been entered.

Response to Amendment

2. The objection to the drawings has been withdrawn.
3. As a result of the amendment to instant claim 1, the rejection of claims 1-8 and 10-19 under 35 U.S.C. 112, first paragraph has been withdrawn; however new grounds for rejection have been set forth below.
4. As a result of the amendment to instant claim 1, adding the limitation of washing the uncooked processed food with water, the rejection of claims 1-5, 7-12, 14-16 and 18 under 35 U.S.C. 103(a) as being unpatentable

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over Lynn (US 5221617) in view of Levy (US 4568643) has been withdrawn.

5. As a result of the amendment to instant claim 1, adding the limitation of washing the uncooked processed food with water, the rejection of claims 1-5, 7-8, 11-12, 14 and 16-17 under 35 U.S.C. 103(a) as being unpatentable over Hollenbeck (US 3615697) in view of Levy (US 4568643) has been withdrawn.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. **Claims 1-14 and 16-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.**

The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Instant claim 1 recites wherein the

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aqueous medium consists essentially of dry yeast extract. If only consisting essentially of dry yeast extract, then the aqueous medium cannot contain any additional components such as the processed food or an amino acid, as recited in instant claim 3.

Regarding instant claim 14, the specification provides support for adjusting of the pH prior to fermentation, as disclosed page 5, lines 27-29 of the specification; however it is not clear as to where in the specification support has been provided for adjustment of the pH during fermentation. In the disclosed examples, the pH has been adjusted prior to processing (i.e. fermentation).

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. **Claims 1-14 and 16-19 are rejected under 35 U.S.C. 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

Instant claims 1 and 2 recite the limitation "an aqueous medium consisting essentially of added dry yeast extract," and "the aqueous medium consists of the dry yeast extract." The limitation does not appropriately define the metes and bounds of the claim since it is unclear

as to how a medium that is aqueous consists of a dry component, such as dry yeast extract. Although the dry yeast extract could be a component in the aqueous medium, the addition of water (aqueous) would have materially have affected the dry yeast extract and therefore, the limitation "consisting essentially of" would have materially affected the dry yeast extract and the aqueous medium composition. In addition, instant claim 3 recites wherein the aqueous medium comprises an amino acid. If the aqueous medium consists of dry yeast extract, it cannot additionally comprise an amino acid. It is not clear as to what is the composition of the aqueous medium.

In addition, regarding instant claim 1, since the aqueous medium consists of dry yeast extract, it is not clear as to how the dry yeast extract is added. Thus the claim is not clear as to what the aqueous medium consists. Furthermore, instant claim 1 recites in step (b) the limitation "fermenting the uncooked processed food in the aqueous medium." The uncooked processed food is placed in the aqueous medium and thus said uncooked processed food is a component of the aqueous medium. Since the aqueous medium consists of dry yeast extract, it is unclear as to how it can also consist of uncooked processed food.

Regarding instant claim 14, the limitations recite wherein "prior to and during" the fermentation "the pH of the aqueous medium is adjusted during the fermentation." The claim limitation states wherein the pH is

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adjusted during the fermentation and thus it is not clear as to how this can occur prior to fermentation.

Claim Rejections – 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. **Claims 1-10, 13 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilton et al. (US 4140801) in view of Levy (US 4568643) and Yeast Growth Medium.**

Hilton et al. and Levy et al. are taken as cited in the prior Office Action, mailed December 1, 2006. Additionally, Hilton et al. teach effective fermentation until the fermented solids contain less than about 0.5 weight percent of reducing sugar or even less than 0.2 weight percent of reducing sugar (Column 3, Lines 47-60). Levy further teaches adding nutrients to the fermentation reactor, such as amino acid containing substances for the purpose of improving the fermentation yields (Column 12, Lines 41-48).

Regarding the new limitations of claim 1, Hilton et al. are silent in teaching dry yeast extract. Regarding instant claim 9, Hilton et al. are silent in teaching recirculation of the aqueous medium into and out of the vessel.

Yeast Growth Medium teaches that yeast extract is a natural growth medium for *Saccharomyces* yeasts. To the ordinarily skilled artisan, *Saccharomyces* yeasts are also known as baker's yeasts, or those yeasts that are used in making food products and fermenting sugar. In addition, it would have been obvious to one having ordinary skill in the art that growth mediums further support the growth of the yeast. Thus, additional yeast in a fermentation vessel would have increased fermentation by increasing the amount of the yeast organism within the fermentation process. It would have been known to the ordinarily skilled artisan that the yeast extract contains nutrients that promote the growth of yeast, such as amino acids.

Therefore, it would have been obvious to one having ordinary skill in the art that to use a growth medium such as yeast extract would have aided in increasing the growth of the yeast microorganism, thus increasing the ability to ferment the potatoes for achieving the reducing sugar levels desired by Hilton et al. The yeast extract would have provided the nutrient rich environment that yeast requires for growth.

Regarding instant claim 7, potatoes have been well known to be both baked and fried, therefore to bake the potato after undergoing fermentation would have been obvious to one having ordinary skill in the art. For instance, French cut potatoes have been well known to be both baked and fried. Other sliced potato pieces such as scalloped potatoes have also been well known to be baked. Therefore, to bake the uncooked processed food would not have provided an inventive step over the prior art.

Regarding instant claim 9 and the recirculation of the aqueous medium while retaining the food in the vessel, Levy teaches recirculation of the fermentation liquor and retaining the fermentable material within the fermenter, as discussed in the arguments, below.

Applicant's arguments, on page 17, that there is no separation of the Baker's yeast after fermentation is completed, and thus has a detrimental effect on the flavor of the end product has been fully considered but is not deemed persuasive. The Examiner asserts, as cited from the prior Office Action, mailed June 16, 2006, that in the abstract

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Hilton et al. states that "the potatoes which are fermented before dehydration exhibit a good rate of reducing sugar decline during fermentation, and may have a less yeasty or fermentation taste upon frying, than potatoes which are fermented after drying to a low moisture level." Thus, in order to ensure a "less yeasty fermentation taste upon frying," it would have been obvious to one having ordinary skill in the art to have washed the yeast fermented potato pieces with water prior to drying and frying. Given the teachings of the reference and the state of the art at the time the invention was made, this would not have involved an inventive step in the art.

Applicant's arguments, on page 18, that the addition of material such as starch containing ingredients were not subjected to the fermentation process, has been considered but are moot in view of the new grounds of rejection above.

Applicant's arguments, on page 19, that the process described by Hilton is not capable of performing the intended use of the claimed invention because it promotes the formation of acrylamide has been fully considered but is not deemed persuasive. Acrylamide can only form when both reactants, the reducing sugars and asparagine, are reacted in the presence of heat to form acrylamide. On column 3, lines 43-60, Hilton et al. state that the reducing sugars should be lowered even less than about 0.2 weight percent of the fermented solids. Therefore, by lowering the reducing sugars to even less than 0.2 weight percent, one of the

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necessary components for reducing acrylamide formation has been lowered. Regarding the instant claim limitation that the starch-based food "contains less acrylamide than without fermentation," made by a process "to reduce the acrylamide production upon cooking," it is noted that the fact that applicant may have recognized or "discovered" another advantage which would flow naturally from following the teachings of the prior art cannot be the basis for patentability when the stated differences would otherwise be obvious in the prior art. In the instant case, simply because the reference did not address each and every possible property of the resultant cooked product, including acrylamide levels, does not change the fact that the disclosed starting materials and methods are the same as those instantly claimed and thus the prior art product would also necessarily possess the claimed properties. Applicant has performed or provided no distinct step such that the property of "reduced acrylamide production" would unexpectedly occur in the claimed invention but not in the reference.

Applicant's arguments, on page 15, that Levy teaches that the product to be fermented, butanol, excess sugars and other solvents leave the fermentation reactor to the extraction unit back to the feeding tank after the butanol is extracted have been fully considered but are not persuasive. Applicant further states that the substrate is exiting the fermentation medium through the membranes and porous surfaces, as cited on column 3, lines 2-4. On this cited column and line, Levy teach

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that the substrate, such a potato along with the recycled fermentation liquor (42) are fed to the fermentation reactor, which comprises a fermentation microorganism as cited on column 4, lines 31-39. On column 4, lines 40-43, Levy states that the *liquid*, and not the solid substrate, passes through the membrane. Levy states on column 11, lines 49-63 that clogging can be further reduced by using a scraper against the inner wall of the membrane. Thus it would have been obvious that solid material is retained by the membrane. Levy teaches avoiding a solution of the extracting solvent with substrate and culture (Column 3, Lines 5-10). An extraction means for preventing substrate *and* culture in solution during extraction would teach the ordinarily skilled artisan that the culture and the substrate are not part of the fermentation liquor. Furthermore and in light of this, regarding the porous membrane, it is unclear as to how the porous membrane (22) can prevent the passage of bacteria but allow the passage of a substrate, such as potatoes. This argument is not persuasive.

Applicant's assertion that the Applicant teaches that the substrate is retained and the fermenting microorganisms are exited through the outlet has been fully considered but is not persuasive. This argument is not commensurate in scope with the claims. Instant claim 1 recites wherein the *aqueous medium* is removed through the strainer and not the microorganisms. Levy teaches recycling the aqueous medium, and as cited in the prior Office Action, mailed June 14, 2006, the use of a portion of microorganisms from a previous batch of fermented foodstuff was

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notoriously well known and commonly done for centuries in all areas of fermented foods, including breads, yogurts and cheese, and fermented beverages. Thus, it would have been obvious to one of ordinary skill in the art to have utilized this age old tradition within the fermentation process of Hilton et al. Furthermore, instant claim 13 only recites wherein the microorganism is recycled and thus Applicant's arguments are not commensurate in scope with the claim. A product can be considered recycled by simply reusing said product within a process. In addition, since Levy teaches adding new substrate to the holding tank, the culture within the fermentation tank is considered recycled between batches.

- 13. Claims 11-12, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hilton et al. in view of Levy (US 4568643) and Yeast Growth Medium as applied to claims 1-10, 13 and 17-19 above, and in further view of Erway (US 5750165) and Baldwin (US 2744017).**

Hilton et al. is taken as applied above. Hilton et al. is silent in teaching wherein the microorganism is a lactic acid bacteria, and wherein at the end of the fermenting the aqueous medium has a pH between about 4 and 5.

Erway teaches blanching raw processed potatoes, cutting the potatoes into the desired shape and subsequently "seeding" the potatoes with lactic acid bacteria (See Figure 1). By seeding with lactic acid bacteria, Erway further teaches that the lactic acid bacteria allows

fermentation of the potato substrate for the purpose of inhibiting the growth of pathogenic organisms in the potato product (Column 4, Lines 55-61).

Baldwin teaches that fermentation of a food product using lactic acid bacteria has been a commercially well known method for removing the sugars present which results in the "Maillard Type" browning reaction (Column 1, Lines 15-45).

In summary, Erway teaches fermenting potatoes using lactic acid bacteria and Hilton et al. teach fermentation of potatoes for the purpose of lowering the levels of reducing sugars that result in browning of the potato product. Baldwin teaches that lactic acid bacteria have been commercially well known to be used to remove sugars that result in the browning of the food product. Therefore, given the teachings of Baldwin, it would have been obvious to the ordinarily skilled artisan that the fermentation of the potato of Erway using lactic acid bacteria would have resulted in the lowering of sugars that result in the "Maillard-type" reaction. Baldwin and Erway further teach that fermentation using lactic acid bacteria would have improved the quality and storage properties of the food (Baldwin, Column 1, Lines 15-22; Erway, Column 3, Line 65 to Column 4, Line 3). Similar to Hilton et al., Baldwin teaches reducing the levels of sugars that result in Maillard reaction browning using fermentation with a microorganism. Baldwin further teaches that lactic acid bacteria has been known to be used to lower the levels of these sugars (Column 1, Lines 39-45). Erway

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teaches fermentation of potatoes using lactic acid bacteria for the purpose of extending the shelf life of the potato. Erway also teaches, as an objective, to reduce Maillard reaction browning (Column 6, Lines 7-10). Given these teachings, it would have been obvious to one having ordinary skill in the art to use lactic acid bacteria to lower the levels of reducing sugars in the potatoes of Hilton et al., since Erway and Baldwin teach that it has been well known in the art to ferment potatoes using lactic acid bacteria, and reduce the levels of sugars that result in Maillard reaction browning using lactic acid bacteria fermentation. Additionally, Erway teaches to one having ordinary skill in the art that to use lactic acid bacteria fermentation would have also further extended the shelf life of the potato. Therefore, to use lactic acid bacteria would not have provided a patentable feature over the prior art.

Regarding the adjustment of the pH and in light of the rejection under 112, second paragraph, by simply fermenting the food product, the pH of the aqueous medium will change as a result of the production of organic acids and gases during fermentation. The production of organic acids naturally occurs as a result of fermentation. In producing lactic acid, for example, lactic acid bacteria fermentation would naturally lower the pH of the aqueous medium. Dissolution of carbon dioxide gas in the water results in the formation of carbonic acid, which is another component that would have adjusted the pH during fermentation.

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Regarding the adjustment of the pH and in light of the rejection under 112, second paragraph, by simply fermenting the food product, the pH of the aqueous medium will change as a result of the production of organic acids and gases during fermentation. The production of organic acids naturally occurs as a result of fermentation. In producing lactic acid, for example, lactic acid bacteria fermentation would naturally lower the pH of the aqueous medium. Dissolution of carbon dioxide gas in the water results in the formation of carbonic acid, which is another component that would have adjusted the pH during fermentation.

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Regarding instant claim 16, Erway teaches that a result of lactic acid bacteria fermentation is the production of lactic acid which would further lower the pH levels of the product (Column 6, Lines 48-50), which after blanching has a pH of between 4.7 and 5.7 (Column 4, Lines 48-54). By producing lactic acid during fermentation, it would have been obvious to one having ordinary skill in the art that the pH would have been further lowered. Therefore, to have a pH between about 4 and about 5 would have naturally resulted from fermentation using lactic acid bacteria, and thus would not have provided a patentable feature over the prior art.

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Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viren Thakur whose telephone number is (571)-272-6694. The examiner can normally be reached on Monday through Friday from 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (571)272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Viren Thakur
Examiner
Art Unit: 1761



KEITH HENDRICKS
PRIMARY EXAMINER